



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,966	02/23/2004	Shinya Marushima	NIP-149-05	7565

7590 08/23/2005

MATTINGLY, STANGER & MALUR, P. C.  
Suite 370  
1800 Diagonal Rd.  
Alexandria, VA 22314

EXAMINER

RODRIGUEZ, WILLIAM H

ART UNIT	PAPER NUMBER
----------	--------------

3746

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/782,966

Applicant(s)

MARUSHIMA ET AL.

Examiner

William H. Rodriguez

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14, 17 and 18 is/are allowed.
- 6) ☒ Claim(s) 16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

This office action is in response to the amendment and remarks filed 6/16/05. Since the examiner has applied new grounds of rejection, this office action is being made non-final to afford the applicant the opportunity to respond to the new grounds of rejection.

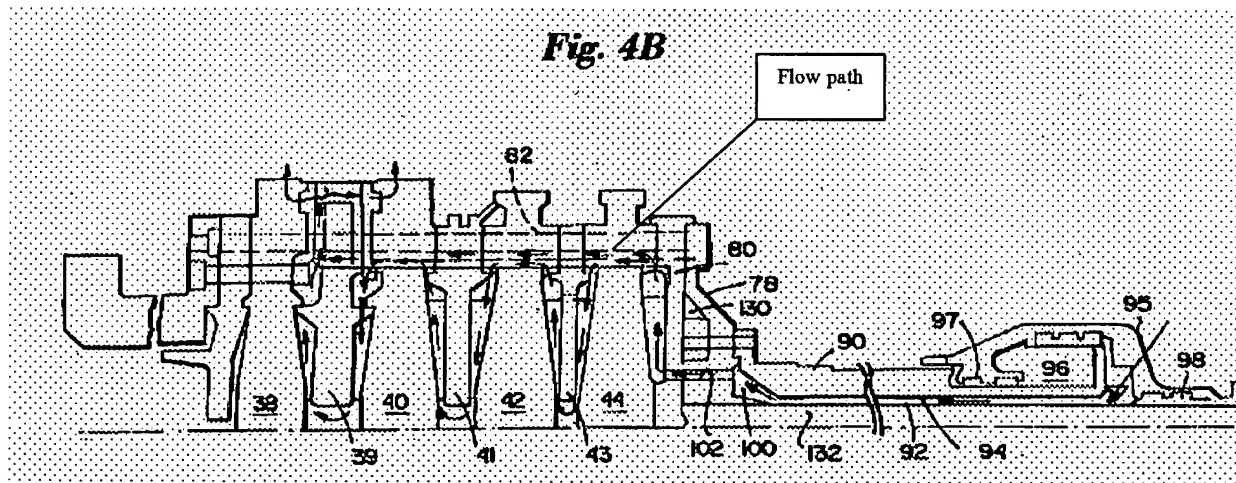
The indicated allowability of claim 16 (in the previous office action) is withdrawn in view of the rejection below.

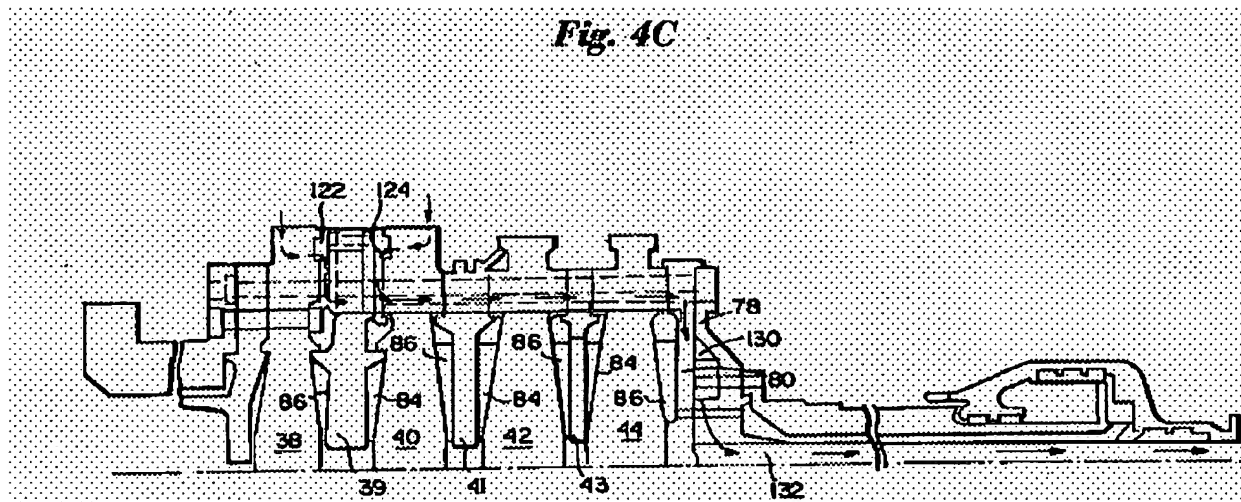
#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

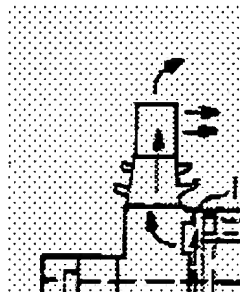
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Carreno et al.** (U.S. 5,593,274) in view of **Suenaga et al.** (U.S. 5,795,130).





Figures 4A, 4C of Carreno.



wherein the fluid introduced into said gap portions is exhausted therefrom into a gas flow path of said gas turbine

**Carreno** teaches a gas turbine which a rotor shaft comprises a plurality of discs 38, 40, 42, 44 each having a plurality of moving blades arranged annularly on the peripheral portion, and spacers 39, 41, 43 arranged between said discs, said respective discs 38, 40, 42, 44 and spacers being arranged in an axial direction in turn, comprising: gap portions 84, 86 formed between rotor axis side regions of said discs 38, 40, 42, 44 facing said spacers 39, 41, 43 and adjacent spacers; a supply flow path 92 for supplying refrigerant for cooling to said moving blades and a recovery flow path 132 for recovering heated refrigerant, each of said supply and recovery flow paths being provided in said rotor shaft; a flow path (see Figure 4B) for introducing fluid into said gap portions 84, 86 provided in said discs (see particularly **Figures 4B, 4C** of Carreno

Art Unit: 3746

above), wherein the fluid introduced into said gap portions is exhausted therefrom into a gas flow path of said gas turbine. **Carreno** does not schematically show that the recovery flow path 132 is arranged on a more radially outer side than said supply flow path but said recovery flow path 132 is arranged on a more radially inner side than said supply flow path 92. However, **Suenaga** teaches a typical heat recovery type gas turbine similar to **Carreno's** heat recovery type gas turbine, wherein the recovery flow path 11 is arranged on a more radially outer side than said supply flow path 11. Accordingly, it would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have modified **Carreno** (as taught by **Suenaga**) such that the recovery flow path is arranged on a more radially outer side than said supply flow path because such a modification would have not affected the efficient operation of **Carreno's** gas turbine and further such modification would have been considered a mere design consideration which fails to patentably distinguish over **Carreno**. See particularly **Figure 1** of **Suenaga**.

***Allowable Subject Matter***

3. Claims 14, 17 and 18 are allowed.

Previously allowable claim 14 has been re-written in independent form as independent claim 14. Also, the allowable subject matter of claim 14 has been incorporated into new claims 17 and 18.

Art Unit: 3746

***Response to Arguments***

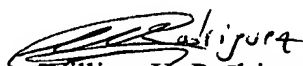
4. Applicant's arguments with respect to claim 16 have been considered but are moot in view of the new ground(s) of rejection.

***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Rodriguez whose telephone number is 571-272-4831. The examiner can normally be reached on Monday-Friday 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 8/18/05  
William H. Rodriguez  
Examiner  
Art Unit 3746